The Natural Mechanism for evoking the Chemical Secretion of the Stomach (Preliminary Communication).

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The enquiry was directed to answering the following questions:—

1. What is the comparative value of different food substances in evoking the chemical secretion of the stomach?

2. What channels of absorption are available for the different food substances?

Experiments in a previous communication to the Society* indicated that the mucous membrane of the pyloric end of the stomach contained the gastric hormone, and was therefore probably a channel of absorption. No direct proof was at that time able to be adduced.

By a method which we have elsewhere described, we were able, for the purpose of the present experiments, to separate functionally the fundus from the pyloric region of the stomach.

Our results indicate that there is practically no absorption in the fundus end of the stomach. It was shown in the previous communication that the mucous membrane at this end did not contain the gastric hormone. At the pyloric end various substances introduced and confined to that region evoke a marked secretion from the fundus mucous membrane. Acid alone is but a slight stimulus. Dextrin has a marked effect. Dextrose and maltose have an effect approximately equal to dextrin. Witte's peptone gives a more pronounced result than the carbohydrates. The meat extract devised by the late Professor Herzen, of Geneva, was found more potent than anything else tried. These different substances introduced into the fundus end, and confined to that end, evoked no secretion. Introduced into the duodenum, they also evoke a secretion, Herzen's extract being most effective.

There was no evidence of any substance passing into the circulation tending to inhibit the gastric secretion. It is shown, therefore, that the pyloric end of the stomach and the duodenum are to be regarded as the normal channels whereby such absorption occurs as liberates the gastric hormone. The fundus end of the stomach is definitely excluded from this function.

* 'Roy. Soc. Proc.,' B, vol. 76, 1905.